

Notice of Allowability

Application No.

09/808,370

Examiner

Ted T. Vo

Applicant(s)

FIORELLA ET AL.

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/12/04.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 14 March 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Anthony Nguyen-Ba

ANTONY NGUYEN-BA
PRIMARY EXAMINER

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1. This action is in response to the Amendment filed on 5/12/04.

The arguments in the Remarks section (Pages 6-9) to amended Claims 1 and 8 have been fully considered. The arguments are persuasive and overcome the rejection over the closest arts of record, Eckley (PCT: International Publication No. WO 92/12478) in view of Grundmann, "Flash Memory Technology and Techniques".

Reasons for Allowance

2. Claims 1-14 are allowed.

Prior art of record, Eckley, discloses a transaction including a memory architecture that initializes software upgrading in an accessible memory devices including ROM, RAM and EEPROMs. In one area of a memory device, it includes vector tables so that when the transaction is executed to cause control transferring to a vector table in the static RAM. Code so called, 'initialization routine' when executed to cause locating commands and routines stored within the memory device. The management of transaction's execution of one vector table in the memory device causes control transferring to an address in another vector table. If an address value in the vector table is modified to one of EEPROMs' locations, it redirects the memory access to the one of modified versions in the memory device. Otherwise, it redirects to the commands and the initialization routines in the memory device.

However, as pointed out by Applicants that Eckley does not suggest the interrupt scenario provided with newly amended limitation in Claims 1 and 8. As pointed out by Applicants, Eckley discloses only an initialization which relies on continuously modified software vector table and that is different from the newly amended limitation in Claims 1 and 8, where with the newly amended limitation, the processor obtains a next instruction from one of the interrupt vector address of a fixed vector table in accordance with the interrupt (Re: Remarks, page 7, lines 6-13). As pointed out by Applicants that the fixed vector table in accordance to the newly added limitation can remain fixed even in the event of a firmware upgrade (Re: Remarks, page 7, lines 16-19) and Eckley does not suggest an interrupt that refers back to the fixed vector table, even when the firmware upgraded (Re: Remarks, page 8, lines 1-4).

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Prior art of record, Grundmann, discloses a single flash EEPROM or EPROM that replaces a ROM. The flash EEPROM can be partitioned. It can store boot code and images and associate its code with the RAM for configuring data and performing interrupt.

However, as pointed out by Applicants that Grumman does not disclose handling of interrupt by referring back to a fixed vector table after firmware upgrade (Re: Remarks, page 8, lines 5-9).

Therefore, the following is an examiner's statement of reasons for allowance:

The cited prior arts taken alone or in combination fail to teach the claims to a method and an apparatus for upgrading firmware comprising at least features:

"filling the software vector table with proper corresponding interrupt vector addresses for the interrupt vectors contained in the fixed vector table as determined by the upgraded version of firmware;

wherein:

in the event an interrupt is generated, the processor obtains a next instruction from one of the interrupt vector addresses of the fixed vector table in accordance with said interrupt;

said next instruction points to a corresponding location in the software vector table; and

said corresponding location in the software vector table points to a corresponding location in one of said first or second application areas." as recited in such manners in independent Claims 1 and 8.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on 8:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV
Patent Examiner
AU 2122
August 23, 2004

A handwritten signature in black ink, reading "Anthony Nguyen-Ba". The signature is written in a cursive, flowing style.

**ANTHONY NGUYEN-BA
PRIMARY EXAMINER**